Summary of standard ISD metrics

Measurement Area	Measurement Objective *[Sample objectives are listed below.]*	Analysis	Measure(s) (Asterisk (*) indicates measure is required by the ISD Measurement Program.)	Tailoring Guidance
Software progress and cost tracking	Ensure project schedule is within 10% of the planned schedule.	Compare planned vs. actual schedule; analyze deviations.	*Event dates (planned and actual) (NOTE: Collect both milestone dates and process event dates.)	Standard set of milestones is project start, SRR, PDR, CDR, start of test, end of test, and delivery to maintenance team. Projects may combine milestones – e.g. small projects may have only one design review -- or track more than the standard ISD set. Need to track process events (e.g. reviewed SMP) as well as product events (e.g. Build 1 ready to test)
	Ensure product progress is within 10% of planned progress.	Compare planned progress points vs. actual progress points.	*Progress tracking points (planned and actual)	
	Ensure project effort and costs remain within 10% of budget.	Compare planned vs. actual effort.	*Total Effort (planned and actual FTEs for civil servants and contractors)	
		Compare planned vs. actual costs.	Effort by CSCI (planned and actual) Facility and equipment costs (planned and actual)	
Software characteristics	Support ISD model-building for future process improvement.	(None required at the project level.)	*Software project name *Software type (flight, ground, analysis/research, infrastructure, other) For each CSCI: *CSCI name *Primary language (e.g., C, C++) *COTS/GOTS/MOTS products * Platform (hardware & operating system) *Size (final) *Units (in which size is measured)	(None)

Summary of standard ISD metrics

Measurement Area	Measurement Objective *[Sample objectives are listed below.]*	Analysis	Measure(s) (Asterisk (*) indicates measure is required by the ISD Measurement Program.)	Tailoring Guidance
Software functionality	Deliver the required software functionality.	Compare planned vs. delivered by release or build.	Number of requirements in the release/build (planned and delivered)	You are required to use at least one measure of functionality.
	Ensure performance measures are within margins.	Compare critical performance measures against margins.	Memory utilization by CSCI (planned and actual)	
Software quality	Ensure product quality.	Compare expected vs. actual level of defects.	*Number of defects by severity (critical, moderate, minor)	Must report number of defects by severity Need to choose at least one indicator of timely action on defects
		Analyze responsiveness to detected defects.	Open and closed defects by severity Length of time defects open by severity	
		Analyze responsiveness to action items.	Open and closed RFAs by length of time open	
Software requirements volatility	Control requirements volatility.	Compare actual to expected level of requirements changes.	*Total number of (actual) requirements changes (i.e., sum of additions, changes, and deletions) Requirements changes by CSCI	Some measure of volatility is required for each CSCI Both measures are reported to the ISD as totals for the project, not at the CSCI level
		Compare actual to expected level of requirements TBDs.	*Total number of (actual) requirements TBDs Requirements TBDs by CSCI	

Summary of standard ISD metrics

Measurement Area	Measurement Objective *[Sample objectives are listed below.]*	Analysis	Measure(s) (Asterisk (*) indicates measure is required by the ISD Measurement Program.)	Tailoring Guidance
Project Planning	Ensure project is re-planned if current estimates exceed planning parameters by 20%.	Re-estimate planning parameters and compare to current estimates.	*Original and revised planning parameters (cost, effort, schedule, local size measure) by revision Number of revisions to plan	
Project Monitoring and Control	Ensure necessary project activities are performed. Ensure project schedules are met. Ensure project risks are monitored and controlled.	Analyze responsiveness to action items	Number of open vs. closed action items	
		Analyze occurrences and trend.	Milestone dates met vs. missed	
		Analyze changes to risk parameters and priorities.	Number of added, modified, and retired risks by severity	
Configuration Management	Ensure configuration management is being performed as planned.	Compare number of changes to expected levels.	Number of changes to configured items	
		Compare planned vs. actual effort.	Effort expended in configuration management (planned and actual)	
Requirements Management	Ensure requirements are being managed as planned.	Compare requirements changes to expected levels.	Number of additions, changes, deletions to requirements by CSCI	
Process and Product Quality Assurance	Ensure software assurance is being performed as planned.	Compare planned vs. actual evaluations.	Number of evaluations (planned and actual)	
Measurement and Analysis	Ensure project measures are collected and analyzed as planned.	(as listed in this table)	(as listed in this table)	

Summary of standard ISD metrics

Verification	Ensure verification activities are performed as planned.	Compare planned vs. actual numbers of peer reviews.	Number of peer reviews (planned and performed)	
		Compare actual vs. planned effort on peer reviews.	Time spent on peer reviews (preparation and review)	
		Compare numbers of defects found to expected levels.	Number of defects found (in peer reviews) by type	
Validation	Ensure validation activities are performed as planned.	Compare number of planned vs. completed validation events.	Number of validation events (planned and completed)	